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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,023	01/30/2002	Shyh-Ming Chang	ERSO83-002B	8525
28112	7590	10/23/2003	EXAMINER	
GEORGE O. SAILE & ASSOCIATES 28 DAVIS AVENUE POUGHKEEPSIE, NY 12603			NGUYEN, DILINH P	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/061,023

Applicant(s)

CHANG ET AL.

Examiner

DiLinh Nguyen

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4/02. 6) ☐ Other: _____

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

In page 1, line 3, what is the Serial No.? What is the filing date?

In page 1, line 6, what is the Serial No.? and what is the filing date?

Appropriate correction is required.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the conductive metal coating is comprised of an adhesion layer, a barrier layer and a conductor layer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6249051. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claims 1-3 of U.S. Patent No. 6249051 do not disclose the composite bump is deformed when the connection is formed. However, it is well known in the art that the composite bump is deformed when the connection are formed. Therefore, claims 1-3 of U.S. Patent No. 6249051 do not necessary teach this limitation.

Claims 4-5 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 7 of U.S. Patent No. 5431328. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claims 1 and 7 of U.S. Patent No. 5431328 do not disclose the composite bump is deformed when the connection is formed. However, it is well known in the art that the composite bump is deformed when the connection are formed. Therefore, claims 1 and 7 of U.S. Patent No. 5431328 do not necessary teach this limitation.

Prior Art Rejection

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karnezos (U.S. Pat. 4813129).

Karnezos discloses a semiconductor device (figs. 2-3, column 4, lines 15 et seq.) comprising:

an element 26 having input/output pads 28;

a substrate 12 having input/output pads 14; and

a plurality of physical and electrical connection between the element input/output pads and the substrate input/output pads wherein each the connection includes a composite bump comprised of a polymer body 18 (column 4, lines 37-38) and a conductive metal coating 20 covering the polymer body.

Karnezos does not disclose the composite bump is deformed when the connection is formed. However, it is well known in the art that the composite bump is deformed when the connection are formed. Therefore, Karnezos does not necessary teach this limitation.

- Regarding claim 3, Karnezos discloses the metal coating is comprised of an adhesion layer, a barrier layer and a conductor layer Cr/Cu/Au (column 6, line 43).
- Regarding claim 4, it would have been obvious to form the composite bumps on the IC element input/output pads prior to formation of the connection.

- Regarding claim 5, Karnezos discloses the composite bumps are formed on the substrate 12 input/output pads prior to formation of the connection (fig. 2).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Karnezos (U.S. Pat. 4813129) in view of Afzali-Ardakani et al. (U.S. Pat. 5397863).

Karnezos fails to disclose the polymer is polyamic acid polyimide.

Afzali-Ardakani et al. disclose a polymer is polyamic acid polyimide (column 8, lines 12-14). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Karnezos to improve dielectric composition, suitable for use in high performance electronic device packaging and to methods for fabricating the improved dielectric, as shown by Afzali-Ardakani et al.

4. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karnezos (U.S. Pat. 4813129) in view of Schulte et al. (U.S. Pat. 4865245).

Karnezos fails to disclose the composite bumps are formed on both the integrated circuit element input/output pads and substrate input/output pads prior to formation of the connection.

Schulte et al. disclose a semiconductor device (figs. 4-5) comprising :

composite bumps are formed on the integrated circuit element 10 (column 2, lines 59-60) prior to formation of the connection and the composite bumps are formed on both the integrated circuit element 10 and substrate 16 prior to formation of the connection (fig. 4-5). Therefore, it would have been obvious to modify the device of

Conclusion

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

[Handwritten signature]